

Some thoughts on divestment

Posted: October 10, 2014 by [Ken Cohen](#)

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At the recent United Nations-sponsored Climate Summit, [U.N. General Secretary Ban Ki-Moon stated](#), “Now is the time for action.”

We can all agree that climate change poses a significant challenge for the world. The question, then, is what sort of action should be taken?

One proposal that is being pushed – [with a full-throated endorsement from Mary Robinson](#), Ban Ki-Moon’s special envoy on climate issues – is a movement to get large institutional investors to divest their holdings of companies involved in producing fossil fuels.

It is, simply, a movement that is out of step with reality.

For one thing, divestment represents a diversion from the real search for technological solutions to managing climate risks that energy companies like ours are pursuing. The industry-driven natural-gas boom in the United States is Exhibit A in this regard.

Fossil fuel benefits ...

Domestic natural gas production has risen more than 25 percent since 2008 thanks to our industry’s innovations, and natural gas



reserves are up more than 25 percent as well. These additional supplies have helped displace a significant amount of coal for power generation, leading to [a reduction in U.S. energy-related greenhouse gas emissions](#) to levels last seen in the 1990s.

No government program or mandate brought about this progress. Now compare what has happened in the United States to Europe, where a more bureaucratic approach to emissions reductions and other climate policies has undermined investment and innovation, and [largely failed to curb emissions](#). Those currently calling for divestment should celebrate what our industry has done, not condemn it.

President Obama certainly celebrates our industry's accomplishments. His [all-of-the-above strategy hails the fact](#) that the United States, since 2005, has reduced emissions more than any other nation on earth.

And in [his speech last week at Northwestern](#), the president noted how increased domestic oil production has strengthened our energy security. Furthermore, he pointed out, growing natural gas production has helped spark a manufacturing renaissance in a nation where, a decade ago, manufacturing was thought to be in decline.

On top of that, it's worth pointing out the critical contribution our industry makes to the American economy every day. [According to PricewaterhouseCoopers](#), the oil and gas sector supports 9.8 million jobs – that's 5.6 percent of total U.S. employment. In 2011, the industry's total impact on U.S. GDP was \$1.2 trillion, or 8 percent of the U.S. economy.

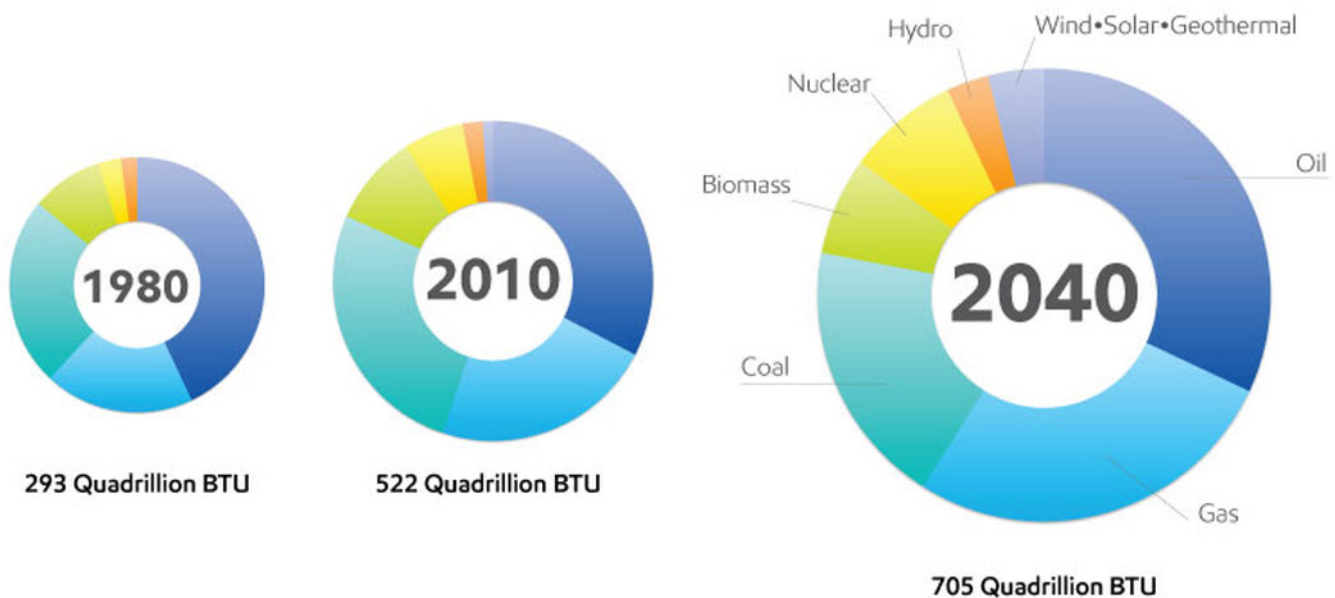
... and energy scale

In the ongoing discussions about how to address the risks of climate change, it is important to recognize how the radical recommendation of the divestment movement – that society stop using fossil fuels altogether – would immediately jeopardize the basic standards of living for billions of people around the world. And it would preclude the billions more in developing nations who are seeking to reach modern living standards from ever doing so.

That's because there are no scalable alternative fuels or technologies available today capable of taking the place of fossil fuels and offering society what those energy sources provide.

"Scalable" is the key word in that sentence. The divestment movement completely ignores the enormous size of global energy needs today (and in the future) and therefore fails to understand the inability of current renewable technologies to meet it.

The scale of global energy demand



Renewable energy sources such as wind, solar, biomass, and hydropower accounted for just 13 percent of the world's primary energy supply (and only 3 percent of fuels for road transportation) in 2009, [according to the International Energy Agency](#). Most of renewables' contribution came from biofuels and hydropower. Wind, solar, and geothermal energy provided just 1.3 percent of global energy.

Renewable energy has a contribution to make, but it looks to be a relatively small one.

Now consider that global energy demand is expected to grow nearly 35 percent by 2040 as developing nations advance and billions of people join the middle class. The nearby chart shows quite clearly the challenge inherent in scaling up technologies to meet a demand that is itself scaling up rapidly.

Renewable sources will need to see fantastic growth just to maintain or slightly exceed their *current share* in the energy mix. (And don't forget that until some unforeseen breakthrough in battery technology occurs, [natural gas must remain on call](#) as a backup for intermittent renewable sources like wind and solar for generating electricity.)



Most estimates suggest that wind, solar, and geothermal will make up no more than 4 percent of the global energy supply by 2040, while the combined share of biomass and hydropower will remain about the same as today. All told, renewables' contribution to the global energy mix in 2040 is expected to be about 15 percent – not much more than today.

Meanwhile, experts at the International Energy Agency, the U.S. Energy Information Administration, and elsewhere have all concluded that fossil fuels will continue to meet about 75 percent of global energy needs well into the middle of this century.

Given these numbers, it's difficult – if not impossible – to see how, in the next several decades, renewables could replace fossil fuels.

That point is never seriously addressed by those advocating divestment. They merely say “no” to fossil fuels. But to not use fossil fuels is tantamount to not using energy at all, and that's not feasible.

I expect those who advocate divestment themselves continue to use fossil fuels as their main sources of energy in their day-to-day lives – automobiles, trains, planes, electricity, petrochemicals, thermoplastics, modern pharmaceuticals ... and the list goes on.

Energy and progress

The chief reality this movement ignores is that access to reliable and abundant sources of energy is the linchpin for societal progress. Energy *is* modern life.

Over the past century and a half, mankind on the whole has lived richer, healthier, cleaner, freer, and more prosperous lives than were lived throughout the entire course of human history. That began when the Industrial Revolution harnessed large-scale energy resources for the betterment of society.

The modern world in which we live – and that many often take for granted – is a world of electricity, transport, trade, labor-saving inventions, and profoundly improved health. It has been made possible by the widespread use of energy.

Wealthier and healthier

This point is so obvious and so fundamentally true that it is often overlooked. It should not be.

World Bank official Rachel Kyte perhaps says it eloquently:

Access to energy is absolutely fundamental in the struggle against poverty. It is energy that lights the lamp that lets you do your homework, that keeps the heat on in a hospital, that lights the small businesses where most people work. Without energy, there is no economic growth, there is no dynamism, and there is no opportunity.

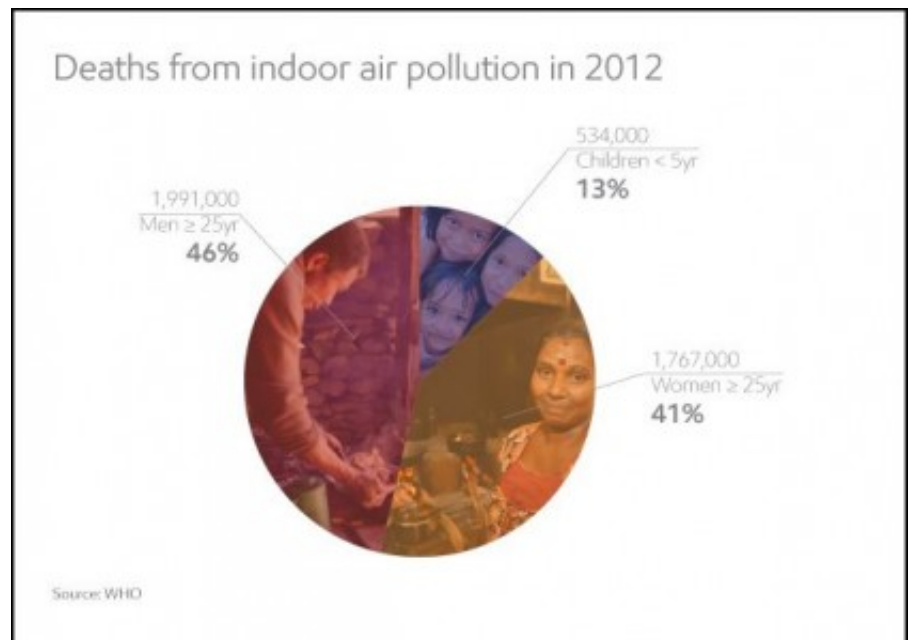
Though the bulk of humanity is far richer and healthier than at any time in history, there are places on earth where the way people live is little different from the subsistence levels of the past.

There are lessons to be learned here: Almost every place on the planet where there is grinding poverty, there is also energy poverty. Wherever there is subsistence living, it is usually because there is little or no access to modern, reliable forms of energy.

The energy poverty numbers are as staggering as they are heartbreaking – 1.3 billion people lacking electricity, and 2.7 billion people using wood, charcoal, or dung for cooking fuel. The World Health Organization estimates that [millions die each year just from air pollution](#) caused by the use of pre-modern energy sources in people's homes, such as open fires for cooking or heating.

A moral imperative exists – for policymakers as well as large energy companies – and it is to seek economic ways to expand the use of modern energy sources to the billions of people around the world currently living without them, and to do so in a manner that safeguards our environment.

That's what we will do at ExxonMobil. At the same time – as we have been doing for over a century – we will continue to invest in research to develop technology that makes our energy future better. I'll blog more on that topic in the weeks ahead.



More on divestment: A letter to Tim Wirth

Posted: November 6, 2014 by [Ken Cohen](#)

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Recently former Sen. Tim Wirth sent me a note on the topic of divestment, a subject about which I [offered some thoughts](#) last month.

That blog post about the divestment issue made clear that ExxonMobil takes seriously the questions about the future of hydrocarbons and their role in meeting the global energy imperative.

I expanded on those points in my reply to Tim, which I thought I would share with readers. What follows is the entirety of my reply to former Sen. Wirth.

Dear Tim:

Thank you for your message. I am appreciative that you seek real analysis and understanding from those who refute the basic case for divestment.

Let me state at the outset that climate change due to rising greenhouse-gas emissions poses significant risks to society and ecosystems. These risks warrant action by individuals, by businesses, and by governments. All segments of our society – including industry, universities, governments, non-governmental organizations, and individual consumers – are needed to advance the search for solutions to this monumental, global challenge.

At the same time, all economic sources of energy are needed to meet the world's needs, as President Obama has advocated in his administration's "all-of-the-above" energy strategy. This includes wind,

solar, and other renewable energy supplies, which the International Energy Agency (IEA) anticipates will grow by 75 percent between 2011 and 2035, a rate higher than the growth in coal, natural gas, or oil over the same period.

Given the scale of energy demand, and the relatively small base from which renewable energy sources begin, hydrocarbons such as oil and natural gas will necessarily continue to play a predominant role. The IEA predicts that oil will meet 27 percent of global energy needs in 2035; natural gas, 24 percent; and coal, 25 percent. By comparison, all other alternatives – including nuclear, hydro, and renewables – will meet a combined 24 percent of world energy needs in 2035, according to the IEA. Hydrocarbon fuels are therefore indispensable for the foreseeable future.



In addition to climate change, energy poverty – a lack of access to sufficient, affordable, and reliable energy sources – poses significant risks, especially for those struggling to survive in developing countries. As the United Nations has stated, none of the Millennium Development Goals can be met without major improvement in the quality and quantity of energy services in developing countries. The challenge is especially acute given the scale of future global energy needs. By the year 2040, energy demand worldwide is expected to increase by 35 percent above 2010 levels. The

humanitarian dimension of the energy debate is often overlooked by divestment advocates.

We face, therefore, a dual challenge of meeting the world's energy needs while managing the environmental effects of energy use. As of yet, there is no single nor simple solution to this challenge. Its sheer scale and complexity requires an integrated set of solutions, some of which have yet to be developed. ExxonMobil remains committed to playing our role in meeting this dual challenge, including supporting the ongoing search for solutions.

One solution that is playing an increasingly important role is natural gas. Technological innovations pioneered by our industry have enabled dramatic increases in natural gas production and accelerated its displacement of coal. This carries significant environmental benefits, given that natural gas emits up to 60 percent fewer carbon-dioxide emissions than coal. As a result, emissions of carbon-dioxide in the United States in 2012 fell to levels not seen for two decades, due mainly to fuel-switching from coal to natural gas, according to the U.S. Energy Information Agency. ExxonMobil is the country's leading producer of cleaner-burning natural gas.

Energy efficiency is another meaningful solution. Through wiser use of energy and application of energy-saving technologies, consumers around the world are expected to save 500 quadrillion BTUs of energy in 2040, significantly offsetting energy demand growth. In fact, without such efficiency gains, global energy demand would be double in 2040 what it was in 2010.

ExxonMobil has improved energy efficiency by 10 percent in our refining and chemical manufacturing operations over the last ten years. A major driver in these efficiency gains has been

our increased investment in cogeneration – a technology enabling us to capture heat generated from electricity production that is otherwise wasted, and use it in other industrial processes. By investing \$1 billion in cogeneration over the past ten years, we have increased our capacity to 5,300 megawatts – enough to meet the annual energy needs of 2.5 million U.S. homes.

We also support initiatives to promote more efficient use of energy by consumers. Technologies pioneered by ExxonMobil have been instrumental to the increased proliferation of energy-efficient hybrid vehicles, for example. In addition, we are also partnering with car makers to develop lightweight plastics, high performance lubricants, and tires that stay inflated longer. Combined, these technologies save America over 20 billion gallons of gas each year. By 2040, advances in fuels and vehicles could enable about 75 percent better fuel economy than today.

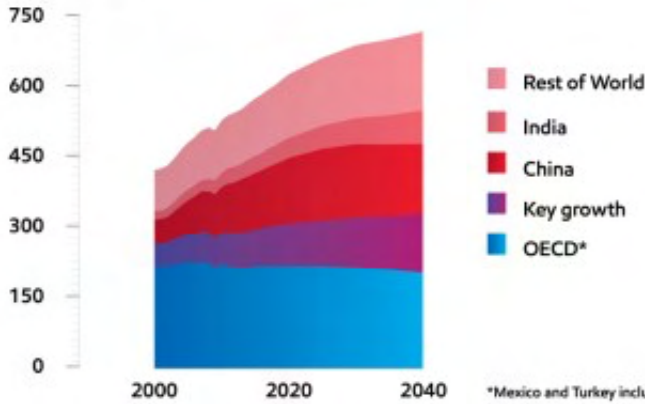
ExxonMobil is also a leader in researching and developing hydrogen fuel-cells for use on-board vehicles. This technology would enable the conversion of conventional hydrocarbons into highly-efficient hydrogen molecules underneath the hood for use in a fuel cell that would emit only water vapor from the tailpipe. On-board hydrogen fuel-cells could be up to 80 percent more fuel-efficient, and emit 45 percent less carbon dioxide, than today's internal-combustion engine.

These solutions are necessary but not sufficient. Further research into breakthrough energy technologies is also required. ExxonMobil has partnered with leading universities and scientific organizations worldwide to advance such research, including as the lead sponsor of the Global Climate and Energy Project at Stanford University and more recently as a sponsor of MIT's Energy Initiative. We are partnering with Synthetic Genomics, Inc., led by Dr. J. Craig Venter who famously sequenced and analyzed the human genome, to research the production of biofuels from photosynthetic algae. If successful, this initiative could augment the world's transportation fuel supply with existing infrastructure while reducing greenhouse gas emissions. And we recently announced the launch of an advanced biofuels research program at Iowa State University focused on fast pyrolysis of biomass. Fast pyrolysis is rapidly heating biomass (including corn stalks) without oxygen to produce liquid bio-oil, which can be upgraded to transportation fuels. If successful, this initiative may someday hold promise for meeting fuel supply needs while reducing emissions.

Companies like ours have the engineering and scientific skills, project management expertise, and commitment to develop and scale up new technologies once they prove to be viable and affordable.

Global energy demand

Quadrillion BTUs



*Mexico and Turkey included in Key Growth



Government policies can influence efforts to balance the need to manage climate change risks and to meet global energy demand. We fully expect governments to take various actions to constrain carbon emissions in coming years. Our increased investment in cleaner-burning natural gas has been guided in part by this assumption. ExxonMobil's *Outlook for Energy*

assumes a proxy cost of carbon of \$80 per ton, significantly above the current average worldwide. Our proxy cost of carbon represents the cumulative impact of government actions, regardless of the precise form these actions eventually take. Should governments decide to impose carbon costs, ExxonMobil advocates for a comprehensive carbon tax as compared to other policy options, a position we first stated publicly seven years ago.

Although not all of the solutions to the economic and environmental challenge we face have yet been determined, it is clear that divestment is not one of them. Divestment diverts attention from the search for meaningful solutions. It seeks to divide when the challenge we face demands that we unite.

The decision to divest rests, of course, with those charged with the fiduciary responsibility for managing institutional investment portfolios.

Oil and natural gas companies represent one of the world's largest asset pools, estimated at \$4.9 trillion in nearly 1,500 listed firms in 2014, according to Bloomberg Finance. Their stocks have outperformed other major sectors over the past five years, and are historically high-yield with average dividends of about 2.4 percent. These solid returns and yields were only possible because these companies provide goods and services of genuine value to consumers all over the world. These returns to shareholders have, in turn, translated into scholarships, research funding, retirement security, and the realization of myriad other financial goals.

Some divestment advocates have warned fiduciaries that fossil fuel companies are an investment risk. They base this warning on the theory that future carbon constraints imposed by governments will "strand" assets and create a "carbon bubble" that could "burst" in the distant future (typically predicted by 2050).

This theory suffers from several critical flaws. It assumes that the valuation of oil and natural gas company assets is based on a timeline extending to 2050 when the bubble would supposedly burst. In reality, however, the intrinsic value of most publicly traded oil and natural gas companies is based primarily on the valuation of proved reserves, 90 percent of which are expected to be monetized in 10 to 15 years, as a recent analysis by IHS Climate Strategy Dialogue shows. In other words, the current valuation of oil and natural gas companies is not contingent upon events beyond 2030.

Moreover, the "carbon bubble" theory falsely assumes that reductions in carbon-dioxide emissions necessarily require reductions in fossil fuel production. Technologies such as carbon capture and storage (CCS), which may eventually enable carbon-dioxide from fossil fuels used for power generation to be safely stored rather than emitted, highlight the potential flaw in this assumption. ExxonMobil is a leader in developing and deploying CCS technology, including invention of the Controlled Freeze Zone process, which more efficiently removes carbon-dioxide from a natural gas stream and therefore makes CCS more affordable. Developments in carbon capture and storage, among other innovations, may preserve the value of fossil fuels in a carbon-constrained world.

Investing in oil and natural companies such as ExxonMobil, therefore, remains a sound decision for those entrusted with managing their university endowments or institutional portfolios.

Divestment, on the other hand, carries risks, not only in lost returns, but also in lost influence.

The stated intention of many leading divestment proponents, however, is not primarily to impact fossil fuel companies' finances or policies, but to stigmatize them. In this regard, they invoke previous divestment campaigns, such as those targeting apartheid South Africa and the tobacco industry, and argue that divesting from fossil fuel companies is a moral act.

The reality is that energy, necessarily generated in large part by fossil fuels, enables modern life and its social and economic progress. Since the Industrial Revolution and the harnessing of large-scale energy resources, mankind on the whole has lived richer, healthier, cleaner, freer, and more prosperous lives. The modern world in which we live – and that is often taken for granted – is a world of electricity, mobility, transport, trade, labor-saving inventions, and profoundly improved health. Energy derived from fossil fuels has made this progress possible.

World Bank official Rachel Kyte recently stated that “access to energy is absolutely fundamental in the struggle against poverty. It is energy that lights the lamp that lets you do your homework, that keeps the heat on in a hospital, that lights the small businesses where most people work. Without energy, there is no economic growth, there is no dynamism, and there is no opportunity.”



You are no doubt aware of the critical contribution our industry makes to the American economy every day. According to PricewaterhouseCoopers, the oil and gas sector currently supports 9.8 million jobs – that's 5.6 percent of total U.S. employment. In 2011, the industry's total impact on U.S. GDP was \$1.2 trillion, or 8 percent of the U.S. economy.

In my view it is ethically dubious to participate in the modern economy and enjoy the benefits it brings while arguing for divestment from the very industry that makes modernity possible. Rather than divest personally, in terms of eliminating one's own use of fossil fuels, many divestment proponents urge others to make the sacrifice.

Promoting divestment rather than supporting the search for meaningful solutions is morally problematic. It ignores the humanitarian imperative to provide for the basic needs of those worldwide less fortunate than ourselves. An estimated 1.3 billion people lack electricity and 2.7 billion people rely on wood, charcoal, or dung for cooking fuel. The World Health Organization estimates that millions die each year just from air pollution caused by the use of pre-modern energy sources in people's homes, such as open fires for cooking or heating. The oil and natural gas industry addresses these needs through the safe and responsible development of affordable energy sources. Divestment does not.

Ultimately, divestment is a divisive and counterproductive diversion from the search for genuine solutions to the economic and environmental challenge we face. ExxonMobil is committed to playing our role in meeting the challenge and advancing the search for solutions.

Best,

Ken Cohen